

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 03 FEB 2006

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Applicant's or agent's file reference O.Z. 6298-WO		<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/EP2004/053176		International filing date (day/month/year) 30.11.2004	Priority date (day/month/year) 17.01.2004	
International Patent Classification (IPC) or national classification and IPC C04B41/49, C04B41/48				
Applicant DEGUSSA AG et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand  06.08.2005		Date of completion of this report  02.02.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Rosenberger, J  Telephone No. +49 89 2399-7856		



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
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**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-16

as originally filed

**Claims, Numbers**

1-13

received on 31.10.2005 with letter of 28.10.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing *(specify)*:
  - ☐ any table(s) related to sequence listing *(specify)*:
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing *(specify)*:
  - ☐ any table(s) related to sequence listing *(specify)*:

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	5,6,12,13
	No: Claims	1-4,7-11
Inventive step (IS)	Yes: Claims	
	No: Claims	1-13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US 2003/0203117 A

D2: US 5 798 415 A

D3: US 2002/0037370 A

2. The present application does not meet the requirements of Article 6 PCT for the following reasons:

Independent claims 1 and 13 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

There is no clear statement in the description of the present application how to achieve the claimed hydrophobic and oleophobic properties of the primer. It is not derivable from the examples and comparative examples and also not from the complete description what the decisive features of the process are. From the examples and comparative examples it can be seen that e.g. the length of the drying and curing time and the type of primer have an effect on the claimed properties.

3. The present application does not meet the requirements of Article 33(1) PCT, because the subject-matter of claims 1-4 and 7-11 is not new in the sense of Article 33(2) PCT for the following reasons:

Document D1 discloses in (comparative) example 7 the treatment of a concrete block in a first impregnation step, which can be regarded as the application of a primer, with a water-diluted antigraffiti concentrate of example 1 of EP 1 101 787, which is a water-soluble condensate of DYNASYLAN TRIAMO (N-[N'-(2-Aminoethyl)-2-aminoethyl]-3-amino-propyltrimethoxysilane) and DYNASYLAN F 8261 (2-tetrahydrooctyltriethoxysilane) in a

molar ratio of 1:3 at a rate of 28 g/m<sup>2</sup>. After 4 hours of drying in the laboratory further impregnation steps are carried by spraying the undiluted antigraffiti solution. As the primer is the same as in present dependent claims 2-4 and the process steps are the same as in present claims 1-4 and 7-11, the hydrophobic and oleophobic properties defined in present claim 1 are also fulfilled by the primer described in D1.

The subject-matter of claims 1-4 and 7-11 is thus not new compared with D1.

4. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-13 does not involve an inventive step in the sense of Article 33(3) PCT for the following reasons:

4.1 The use of fluoroalkyl-modified acrylate copolymers for the hydrophobic and oleophobic treatment of building materials is known from D2 (see the claims). It is thus obvious for the skilled person that the primers disclosed in D1 can be replaced by such fluorinated acrylic polymers. Therefore the subject-matter of claims 5 and 6 does not involve an inventive step compared with D2.

4.2 The feature that the spraying of the compositions employed is carried out by the airless or HVLP process is within the common practice of the skilled person in the field of impregnation of porous substrates. Therefore the subject-matter of claim 12 does not involve an inventive step compared with the disclosure of D1.

4.3 Independent claim 13 defines the use of specific compounds for achieving a specific effect defined more detailed by the resulting hydrophobic and oleophobic properties in claim 1. As long as it is not exactly defined how these properties are achievable (see point 2 above), an inventive step cannot be acknowledged for the subject-matter of claim 13.

4.4 As long as the independent claims do not include the technical features, which are essential for achieving the claimed effect (see point 2 above), the subject-matter of claims 1-4 and 7-13 is also not considered as involving an inventive step compared with the disclosure of D3 (see the claims and the examples).

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**What is claimed is:**

1. A method of preventing substrate discoloring effects when impregnating porous inorganic substrates, by first applying to the target substrate surface a primer composition, drying and curing the primer system, wherein the primer is applied at a rate of from 25 to 200 g/m<sup>2</sup> and dried and cured at a temperature of from 5 to 60°C and at a relative atmospheric humidity of from 0% to 90%, the substrate surface acquiring hydrophobic and oleophobic properties such that a drop of water applied thereto evaporates before it penetrates into the substrate and a drop of n-decane likewise applied thereto and left to act for 30 seconds can be removed, without the drops leaving dark spots on the substrate surface, and then carrying out the impregnation.
2. A method as claimed in claim 1, wherein a primer is used which comprises at least one fluorofunctional component.
3. A method as claimed in claim 1 or 2, wherein a primer is used which comprises at least one fluoroalkylsilyl-functional component.
4. A method as claimed in any one of claims 1 to 3, wherein a primer is used which comprises at least one cocondensate of at least one fluoroalkyl-functional silane and at least one aminoalkyl-functional silane.
5. A method as claimed in any one of claims 1 to 4, wherein a primer is used which comprises at least one fluoroalkyl-modified acrylate polymer.
6. A method as claimed in any one of claims 1 to 5, wherein a primer is used which comprises at least one fluorofunctional acrylic copolymer.
7. A method as claimed in any one of claims 1 to 6, wherein concentrated active substance systems or those diluted with water and/or alcohol are used as primers.



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8. A method as claimed in any one of claims 1 to 7, wherein a primer is used which has a fluorofunctional active substance content of from 0.5% to 30% by weight.

5 9. A method as claimed in any one of claims 1 to 8, wherein the primer is applied by spraying, brushing, rolling or knife coating.

10. A method as claimed in any one of claims 1 to 9, wherein the primer system is dried and cured for at least 4 hours before the impregnation is applied.

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11. A method as claimed in any one of claims 1 to 10, wherein the impregnating composition is applied by spraying, brushing, rolling or knife coating.

12. A method as claimed in any one of claims 1 to 11, wherein the spraying of the compositions employed here is carried out by the airless or HVLP process.

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13. The use of fluoroalkyl-modified and/or fluorofunctional acrylate systems or fluoroalkyl-/aminoalkyl-/alkoxy- and/or hydroxy-functional siloxane systems or fluoroalkyl-functional silane and/or siloxane systems or mixtures of at least two of the aforementioned substances or solutions thereof in water, alcohol and/or solvents as primers for preventing substrate discoloring effects in the case of architectural preservation by impregnation as set forth in any one of claims 1 to 12.

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